



A study on Water, Sanitation, and Hygiene (WASH) Practices among Fisherwomen in Udupi Taluk

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ABSTRACT

Introduction: Clean water, basic toilets, and good hygiene practices are essential for all human beings. Water, Sanitation, and Hygiene are essential in the fish market while handling fish to reduce as well as prevent fish contamination and microbial growth.

Objective: To assess water, sanitation, and hygiene (WASH) practices among the fisherwomen in Udupi Taluk.

Methods: A cross-sectional study was carried out among the fisherwomen using a validated questionnaire in Udupi Taluk. Data were entered and analyzed using IBM Statistical Package for Social Science (SPSS) version 16.0.

Results: The study found that most fish markets use a reliable water source. The fish market had at least one functional toilet and (66.8%) of toilets were clean. It was found that (86.4%) of the waste are been collected daily by the municipality. The majority of the fisherwomen (98.6%) wash their hands before having food, before handling fish practice, and after using the toilet but (62.4%) wash their hands only with water. About (88.3%) but do not wash their hands after receiving currency notes from the customers. The practice of menstrual hygiene was found to be better. Work experience was found to be significantly significant with (p-value <0.05).

Conclusion: Training and awareness programs need to be conducted to increase the knowledge about hygienic conditions and fish in the fish market.

Key Words: Water, Sanitation, Hygiene Practices, Fisherwomen, Fish Market, Hand Washing

INTRODUCTION

Clean water, basic toilets, and good hygiene practices are essential for all human beings. Lack of these basic needs may lead to an increased risk of infection in humans.¹ The Water, Sanitation Hygienic condition of fish is an essential criterion for the consumer's health because the unhygienic condition is the cause of many diseases. Maintaining a hygienic environment in the fish market is highly significant for proper marketing, good quality, and safe fish for consumption.²

Drinking water and sanitation, as well as promoting good hygienic practices are key components in the prevention of diseases, reducing the incidences of diseases, thereby enhancing the quality of life.³ The burden of diseases could be decreased by 10% through prevention and improvement in water resources simultaneously with sanitation and hygiene.⁴ Water, Sanitation, and Hygiene are essential while handling fish to reduce as well as prevent fish contamination and microbial growth.⁵ Improved hygiene is one of the most effective

means of reducing disease occurrence. Hand washing with soap before handling fish and after cleaning them can interrupt the transmission of diseases. A simple habit of washing hands goes a long way toward preventing diseases.

Personal hygiene is essential in protecting and maintaining health, addressing health problems, and is also fundamental to the prevention of many diseases.⁶ The fisherwomen handle the fish with bare hands, thus personal hygiene is essential because the body is prone to various types of contamination. Practicing proper hand hygiene may be one of the most cost-effective means of reducing the global burden of disease. Clean drinking water, hygiene, and sanitation play a vital part in maintaining health.⁷ This paper explains the status of Water, Sanitation, and Hygiene (WASH) practices among the fisherwomen in Udupi Taluk. Thereby analyzing the need for interventions in the environment or the practices of the fisherwomen in the taluk.

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METHODS

A cross-sectional study was conducted in 32 fish markets of Udupi Taluk. The list of participants was obtained from the Udupi Taluk mahila hasimeenu maratagarara sangha, Udupi, and the participants matching the inclusion criteria were selected. Fisherwomen involved in selling fish at the fish market under Udupi Taluk with at least one year of experience were included in the study and those using personal protective equipment (PPE) and having injuries were excluded. The list of fish markets was obtained and each participant was selected using a simple random sampling. The ethical committee clearance was obtained from Kasturba Medical College on 9 October 2019 (IEC: 754/2019) and permission from Udupi Taluk mahila hasimeenu maratagarara sangha, Udupi.

With a 95% confidence Interval, 5% Margin error, and considering the prevalence of 57% ² sample size was estimated to be 367. A checklist was used to conduct an environmental assessment which is an observational method to look for the status of WASH in the fish markets of Udupi Taluk. A semi-structured interview administered questionnaire was used to assess the WASH practices among fisherwomen in Udupi Taluk. The questionnaire consists of the following domains: Socio- demographics, Water-Related Practices, Sanitation Related Facilities, Waste Disposal Facilities, Practices of Personal Hygiene, Practices of Work Area Hygiene, and Practices of Menstrual Hygiene. The participants have informed of the purpose of the study and informed written consent was obtained. All interviews were conducted during the daytime in the local language.

Data were analyzed using IBM ® SPSS Software 16.0. The variables were analyzed and described in frequency and percentage. A Chi-Square test was performed to find the association between different variables and hand washing. The p-value <0.05 was considered to be statistically significant.

RESULTS

The Environmental Assessment of (WASH) in the Fish Markets:

Out of 32 fish markets visited, one lacked water supply and availability. The water was clean, 24 hours available and stored in overhead tanks in the fish markets. It was found that seven fish markets lacked waste bins and 25 fish markets had waste bins available in the markets. Six fish markets lacked toilets, and the remaining 26 had at least one functional toilet. All 32 toilets had ventilation and water available in the toilet. The toilets had no dustbin or soap facilities available in the fish markets. The study result indicates that 24 (75%) wash their sitting area and 30 (93.8%) wash their baskets daily but with only water. About 31 (93.8%) fish markets do not wash

their knife after cutting fish each time. The majority of the study participants, 160 (43.6%) were above 55 years, and 366 (99.7%) of the fisherwomen were married. About, 192 (52.3%) were illiterate and the rest had some formal education. A large proportion 151 (41.2%) of them had work experience above 20 years.

The major sources of drinking water were 358 (97.5%) carried water from their home. The major source of domestic water bore well water 169 (46.0%) in the market. It is found that 345 (94.0%) of the participants received water daily (Table 1). The study results reported that 246 (67.0%) of the participants use sit-down toilets in the fish markets. It is found that about 343 (93.5%) of the participants stated that there was water available in the toilet. The majority of the study participants 343 (93.5%) use nearby toilets in case of the absence of a toilet and do not practice open defecation (Table 2).

Of the study participants 219 (59.7%) reported that dustbins were not found in of the fish markets. It was reported that 317 (86.4%) of the waste are been collected daily by the municipality. It was found that 86.6% of the waste bin was cleaned daily. Only 229 (62.4%) of the study participants wash their hands only with water. The majority of the study participants 202 (55.0%) brush their teeth once a day, 233 (63.5 %) participants have body baths twice a day, and 351 (95.6%) of the participants have head bath on alternate days. Around, 189 (51.5%) of the study participants cut their nails when required (Table 3). It is found that 366 (99.7%) of the participants daily wash their baskets but only 0.3% wash with soap and the majority of the participants wash their baskets with only water. About, 348 (94.8%) of the study participants daily clean their sitting area with only water (Table 4).

Out of 128 study participants assessing menstrual hygiene practices, 109 (85.1%) of the fisherwomen were using pad use pads and 19 (14.9%) of the fisherwomen use unhygienic cloth. 1% of the fisherwomen disposed of the pads by burning them and 27 (21.0%) dispose of the pads into the bins after wrapping it in a cover (Table 5). The work experience of the fisherwomen and the material used for hand washing was found to be statistically significant (p-value <0.05). The fisherwomen with more than 20 years of work experience were found to be using water (46.3%) as compared to soap (35.3%) and hand wash (15.8%) which was found to be statistically significant (Table 6).

DISCUSSION

The study found that the majority of the fish markets use a reliable source of water, which is the bore well water or well water, and none of them were found to use water from an unreliable source like a pond, river, or lake than the study conducted by Holm et al.⁸ On the aspect of sanitation, it was found that 60.8% of the participants used to pour water in

buckets after using toilets and 32.7% of the participants used flush in the markets than the study conducted by Orimoloye et al.⁹

In the present study, 98.6% of the participants practice hand washing before and after food and after latrine use compared to the study conducted by Mohammad Shahadat Hossain et al.¹⁰ The study participants cut their nails when required. About, 85.1% of the fisherwomen were using pads and washing their genitalia while using the toilet during their menstrual cycle were 78.1%. In the present study 51.2% of the participants wash their knives before and also after cutting fish as compared to the study conducted by Iyer et al.¹¹

Recall bias is one of the limitations as data was collected according to the participant's responses. The study finding may not be generalizable to other settings due to varying environments, hygiene practices, and socio-demographics is another limitation of the study. The best solution could be creating education and intervention programs in the form of group informal meetings to create awareness of the importance of hand washing will help them improve their hygiene practices. A training program on proper hand washing techniques can be conducted for the fisherwomen on a monthly basis and monitor the practice of hand washing using feedback for improvement. This study has generated important evidence which will help the fishing association come up with IEC materials and display educational and informational posters in the fish markets. The Availability of soap or hand wash at each fish market and critical times of hand washing is essential which will help them improve their hygienic practice.

CONCLUSION

The overall study findings reveal that the fisherwomen handling fish in the market could be trained in essential aspects of food safety and hygienic fish-handling practices. This will inculcate hygiene awareness and WASH practices among fisherwomen in Udupi Taluk.

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Table 1: Water Related Practices of the fisherwomen

Categories	Frequency n (%)
Sources of Drinking Water	
Home	358(97.5)
Well	8(2.2)
Piped Water	1(0.3)
Sources of Domestic Water	
Well	108(29.49)
Bore Well Water	169(46.0)
Piped Water	84(22.9)
No Water	6(1.6)
Time of Water Supply	
Morning	110(30.0)
Morning and Evening	25(6.8)
24 Hours	226(61.6)
No Water	6(1.6)
Frequency of Water Supply	
Daily	345(94.0)
Alternative Days	14(3.8)
Once in 3 Days	2(0.5)
No Water	6(1.6)

Table 2: Sanitation Related Facilities

Categories	Frequency n (%)
Type of Toilet	
Sit down Toilet	246(67.0)
Squat and Sit Down	97(26.4)
No Toilet	24(6.5)
Type of Toilet Facility	
Flush	120(32.7)
Pour (Bucket)	223(60.8)
No Toilet	24(6.5)
Toilet Cleanliness	
Yes	245(66.8)
No	122(33.2)
Water Availability in Toilet	
Yes	343(93.5)
No	24(6.5)
Absence of Toilet	
Use Toilet Nearby	343(93.5)
Home	24(6.5)

Table 3: Practices of Personal Hygiene

Categories	Frequency n (%)
Frequency of Hand Wash	
Before and After Food	3(0.8)
After Latrine Use	2(0.5)
Before and After Food / Latrine Use	362(98.6)
Materials For Hand Wash	
Only Water	229(62.4)
Soap	119(32.4)
Hand Wash	19(5.2)
Frequency of Head Bath	
Once a Day	13(3.5)
Alternate Days	351(95.6)
Weekly	3(0.8)
Frequency of Cutting Nails	
Daily	11(3.0)
Weekly	157(42.8)
When Required	189(51.5)
Never	10(2.7)

Table 4: Practices of Work Area Hygiene

Categories	Frequency n (%)
Frequency of Washing Knife	
Before Cutting Fish	13(3.5)
After Cutting Fish	161(43.9)
Before and After Cutting Fish	188(51.2)
Never	5(1.4)
Materials for Wash Baskets	
Only Water	366(99.7)
Soap	1(0.3)
Frequency of Cleaning the Sitting Area	
Daily	348(94.8)
Alternate Days	9(2.5)
Weekly	4(1.1)
Never	6(1.6)
Hand washing after receiving currency notes	
Yes	43(11.7)
No	324(88.3)

Table 5: Practices of Menstrual Hygiene

Categories	Frequency n (%)
Menstrual Hygiene	
Yes	128(34.9)
No	239(65.1)
Material Used During Menstruation (n=128)	
Sanitary Pads	109(85.1)
Cloth	19(14.9)
How Often Do You Wash Your Private Parts (n=128)	
Whenever I Use Toilet	100(78.1)
Whenever I Change Pads/Cloth	28(21.9)
Materials used to Wash (n=128)	
Water	128(100)
Soap	0(0)
Disposal of Pads / Cloth (n=128)	
Burn It	86(67.1)
Throw It	5(4.1)
Wrap In Paper And Throw	27(21.0)
Flush	10(7.8)

Table 6: Work Experience of Fisherwomen and hand washing material

Work experience	Material for Hand Washing			Total	p-value
	Water	Soap	Hand wash		
1-4	8 (3.5%)	8(6.7%)	0(0%)	16	0.01
5-10	31(13.5%)	30(25.2%)	2(10.5%)	63	
11-14	45(19.7%)	19(16.0%)	10(52.6%)	74	
15-20	39(17.0%)	20(16.8%)	4(21.1%)	63	
Above 20	106(46.3%)	42(35.3%)	3(15.8%)	151	
Total	229(62.4%)	119(32.4%)	19(5.2%)	367	